

B. Claims

1. (Currently amended) A transgenic non-human aquatic organism whose genome comprises a disruption of an endogenous growth differentiation factor-8 (GDF-8) gene, wherein said disruption comprises an insertion of a transgene into the endogenous GDF-8 gene, and wherein said disruption results in said animal exhibiting increased muscle mass as compared to a wild-type animal.
2. (Original) The transgenic aquatic organism of claim 1, wherein the aquatic organism is selected from the group consisting of a crustacean, a mollusk, a chordate, a gastropod, a pelecypod, a cephalopod and an echinoderm.
3. (Original) The transgenic aquatic organism of claim 1, wherein the aquatic organism is selected from the group consisting of a piscine and an amphibian.
4. (Previously presented) The transgenic aquatic organism of claim 1, wherein the transgene comprises a selectable marker sequence.
5. (Previously presented) The transgenic aquatic organism of claim 1, wherein the transgene comprises a nucleotide sequence that replaces or intervenes in the endogenous GDF-8 gene sequence, and wherein the aquatic organism is homozygous or heterozygous for disruption of an endogenous GDF-8 gene.
6. (Original) Fish meat produced by the transgenic aquatic organism of claim 3.

7. (Original) A method of producing food products from an aquatic organism having increased muscle mass, said method comprising:

- a) introducing a transgene that disrupts or interferes with expression of growth differentiation factor-8 (GDF-8) into a fertilized embryo, into a fertilized egg, or into germ cells of a pronuclear embryo of the aquatic organism
- b) implanting an embryo of step a) into an oviduct of an appropriate pseudopregnant female, thereby allowing the embryo to mature to full term progeny;
- c) testing the progeny for presence of the transgene to identify transgene-positive progeny having increased muscle mass;
- d) cross-breeding transgene-positive progeny to obtain further transgene-positive progeny having increased muscle mass; and
- e) processing the progeny having increased muscle mass to obtain food products.

8. (Previously presented) A method for producing a transgenic aquatic organism exhibiting an increase in muscle mass, said method comprising:

- a) introducing a transgene comprising a selectable marker sequence into an aquatic organism embryonic stem cell;
- b) introducing said embryonic stem cell into an aquatic organism embryo;
- c) transplanting said embryo into an appropriate pseudopregnant aquatic organism;
- d) allowing said embryo to develop to term; and
- e) identifying a transgenic aquatic organism whose genome comprises a disruption of an endogenous GDF-8 gene, wherein said disruption results in said aquatic organism exhibiting increased muscle mass as compared to a wild-type aquatic organism.

9. (Original) A transgenic aquatic organism produced by the method of claim 8, wherein the genome of said aquatic organism comprises a disruption of an endogenous GDF-8 gene,

wherein said disruption results in said aquatic organism exhibiting increased muscle mass as compared to a wild-type aquatic organism.

10. (Original) The method of claim 8, wherein said transgenic aquatic organism is homozygous or heterozygous for said disruption of an endogenous GDF-8 gene.

11. (Original) The method of claim 8, wherein said step of introducing a transgene into an embryonic stem cell is performed by infecting the embryonic stem cell with a virus containing the transgene.

12. (Original) The method of claim 11, wherein the virus is a retrovirus.

13. (Previously presented) The method of claim 7, wherein the transgene comprises a GDF-8 antisense polynucleotide, which interferes with expression of GDF-8.

14. (Original) The transgenic aquatic organism of claim 8, wherein the aquatic organism is selected from the group consisting of a crustacean, a mollusk, a chordate, a gastropod, a pelecypod, a cephalopod and an echinoderm.

15. (Original) The transgenic aquatic organism of claim 8, wherein the aquatic organism is selected from the group consisting of a piscine and an amphibian.

54. (Withdrawn) A transgenic non-human aquatic organism whose genome comprises an inserted transgene encoding a molecule that interferes with expression of endogenous growth differentiation factor-8 (GDF-8), wherein the molecule is a dominant negative GDF-8 polypeptide or an antisense nucleotide sequence, a ribozyme, or a triplexing agent, which is complementary a polynucleotide encoding GDF-8, and whereby expression of the transgene

reduces GDF-8 levels in the transgenic aquatic organism, thereby resulting in the transgenic organism exhibiting increased muscle mass as compared to wild-type organism.

55. (Withdrawn) The transgenic aquatic organism of claim 54, wherein the aquatic organism is a crustacean, a mollusk, a chordate, a gastropod, a pelecypod, a cephalopod, or an echinoderm.

56. (Withdrawn) The transgenic aquatic organism of claim 54, wherein the aquatic organism is a piscine or an amphibian.

57. (Withdrawn) The transgenic aquatic organism of claim 54, wherein the transgene encodes an antisense nucleotide sequence, a ribozyme, or a triplexing agent, which is complementary a polynucleotide encoding GDF-8.

58. (Withdrawn) Fish meat produced by the transgenic aquatic organism of claim 54.